

September 22, 2022


Dear Academic Standards Committee:

Herewith is the 1-year report for the Periodic Program Review (PPR) of the Electrical Engineering Program:

Please see below

- a) 1-year follow up report for the initiatives that were outlined in the Electrical Engineering PPR and as requested by Academic Standards. This is followed by
- b) the UDLEs Learning Outcomes mapping to our program (CEAB) learning outcomes, which were unfortunately omitted purely by oversight in the original PPR document.
- c) Finally, all course outlines that did not comply with Senate policy have now been modified and we have put in place an in-house system for the creation of course outlines to ensure compliance.

If you require anything further please don't hesitate to contact me.



Dimitri Androutsos
Department Chair

Recommendation #1:

Update and Refresh early core circuit course ELE 202 & ELE 302 laboratory experience. The laboratory experiments have not been changed or updated for a very long time and the lecture content is not in synch with labs.

Objective:

Change lab experiments completely and provide increased and improved training for TAs.

Actions: e.g.

- *Design new experiments;*
- *Test experiments for difficulty and for reasonable time requirements for completion;*
- *Hire a “Lab Lead” to supervise Lab TAs and to provide additional support during lab supervision;*
- *Provide more preparation hours for all TAs to perform all labs before they supervise to ensure they are aware of what the students are required and expected to do;*
- *Have “Lab Lead” train TAs on lab supervision and on the actual lab experiments.*

Timeline:**ELE 302:**

- *Summer 2018: design and test new labs*
- *Fall 2019: introduce new labs into course and sync lecture material*
- *Hire CUPE as Lab Lead*

ELE 202:

- *Winter 2019 Hire CUPE as Lab Lead*
- *Summer 2019: design and test new labs*
- *Winter 2020: introduce new labs into course and sync lecture material*

Responsibility for:

a) leading initiative: *Department Chair, Program Director, Course Instructors*

b) approving recommendation, providing resources, and overall monitoring:

Department Chair, Program Directors

Status for 1-year Follow-Up Report:

- *New laboratory experiments have been created for ELE 202 and ELE 302 as of Fall 2022.*
- *Lab rooms have also been updated to increase the number of workstations so that lab experiments can now be done individually rather than with a partner*
- *Lab Leads have been implemented since 2019*
- *an increased role from our technical staff in the creation and currency of labs equipment and lab assignments*

Recommendation #2:

Create common lab courses, or “lower years engineering design projects”, where semester-long or year-long extended lab projects will support multiple courses.

Objective: (statement that further describes the recommendation)

This recommendation will allow for students to have a better grasp on how the components of various classes fit together in an overall design. For example, a Lab Studio could have as a project a more interesting, involving and practical project that requires knowledge that is taught in the lecture component of numerous courses in the term and/or academic year.

Actions: e.g.

- Identify courses that can be part of the common lab course
 - Remove lab hours from these courses
- Design and test lab projects to be part of the common lab course
- Schedule extended common lab hours for students

Timeline:

- 2019/20 Investigate, analyze and plan
- Departmental approval: by end of September 2020
- Implementation 2021/22

Responsibility for leading initiative:

Department Chair, Program Director

Responsibility for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation:

Department Chair, Program Director, Curriculum Committee, Department Stream Committees

Status for 1-year Follow-Up Report:

This initiative has been discussed at a high level and deemed much too difficult to do at the moment as it would require a major overhaul of all core courses, would require additional resources (i.e., faculty and staff) and would also require buy-in from other departments that provide service courses to the electrical engineering program. Discussions at the faculty level during regular meetings and retreats have increasingly made it clear that we may need to progress towards such a model in the coming years, but at a department level we have put this initiative on hold.

Recommendation #3:

Fourth year professional electives need to be evaluated for currency, program need and student interest.

Objective:

ELE has a wide range of specialization areas and some of these have changed considerably in the last few years while others have just become extremely significant with an increased industrial, commercial and research interest.

Actions:

- *Analyze enrollment data of all courses over the last 10 years;*
- *Identify courses that are essential;*
- *Identify courses whose content has not changed in the last 5 years and also those that have had very low student demand;*
- *Identify areas/topics that are currently in demand that we do not offer;*
- *Update “stale” courses*
- *Delete courses with historically low interest and/or currently irrelevant topics*
- *Introduce new courses covering topics in emerging and new areas (e.g. AI)*

Timeline:

- *2018/19: analyze enrollment data, identify courses for deletion/refresh, propose new courses*
- *2019/20: roll-out updated professional electives table*

Responsibility for leading initiative:

Department Chair, Program Director, Curriculum Committee, Stream Committees

Responsibility for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation:

Stream, Curriculum Committee, Department Council, Dean

Status for 1-year Follow-Up Report:

- *Four courses have been discontinued: ELE 714, ELE 724, ELE 725, ELE 884*
- *Two new courses have been created: ELE 727, ELE 827*
- *Three courses have been updated” ELE 861, ELE 885, ELE 888*

Recommendation #4:

Improve TA support to undergraduate courses with overall increased stringency on the requirements for selection and also with adequate training and preparation

Objective:

Provide more hours for increased and specialized training for TAs in core courses.

Actions: *e.g.*

- *identify key courses that have a large number of TAs;*
- *increase preparation/training hours for TAs in those courses;*
- *require TAs to perform and complete all labs that undergraduate students will be doing;*
- *introduce and hire Lab Leads to roam labs and provide extra support and supervision.*

Timeline:

2018/19 academic year

Responsibility for leading initiative: Department Chair

Responsibility for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: Department Chair

Status for 1-year Follow-Up Report:

- Lab Leads (Head TAs) have been hired for core courses. These Head TAs help to train new TAs on how to supervise labs and help students on essential lab equipment usage and core lab knowledge/skills.
- All TAs, in particular new hires, *must* perform all labs in the course they are assigned to ensure they are familiar with the material
- Additional hours (4 total) have been assigned to TAs that are assigned to courses that they have never TA-ed before so that they can spend more time getting trained on the lab content

<p>Recommendation #5: Integrate opportunities for students to improve and build on soft skills (e.g., leadership, oral presentation, professionalism)</p>
<p>Objective: <i>Introduce more oral presentations in all years, particularly in 2nd and 3rd year, while also providing avenues to cultivate leadership skills.</i></p>
<p>Actions:</p> <ul style="list-style-type: none"> • <i>identify key core courses where students can present orally</i> • <i>provide leadership opportunities to senior graduate students by creating a program that will allow them to mentor students in early years</i> • <i>work with career centre to have them visit classes and hold seminars to relay to students the aspects of professionalism that are essential and to help them cultivate them</i>
<p>Timeline: 2018/19:</p> <ul style="list-style-type: none"> • <i>investigate courses that can easily have oral presentations included in labs and/or group work</i> • <i>invite career centre to plan seminars on professionalism</i> <p>2019/20</p> <ul style="list-style-type: none"> • <i>formally integrate into courses</i>
<p>Responsibility for leading initiative: <i>Department Chair, Program Director</i></p>
<p>Responsibility for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation: <i>Department Chair, Stream</i></p>
<p>Status for 1-year Follow-Up Report:</p> <ul style="list-style-type: none"> - increased the number of oral presentations in 4th year EDP - new 4th year CEN 810 is a large group project that includes interaction with an industry partner where professionalism and oral presentation will be paramount <p>This initiative continues to be discussed and is an ongoing topic, especially in how more courses can integrate these soft skills.</p>

Recommendation #6:

Increase the number of co-op internship jobs available to students

Actions: e.g.

- *Identify potential employers in GTA and Southern Ontario*
- *Create 1-page prospectus/flyer that provides quick info on our co-op internship and benefits to the employer*
- *Plan site-visits with potential employers to discuss their participation*

Timeline:

Fall 2018

- *create prospectus/flyer;*
- *identify possible new employers;*
- *send out email and flyer*
- *follow up and initiate discussion;*

Winter 2019-

- *continue constant contact with existing employers and continue identifying and inviting new employers.*

Responsibility for leading initiative: e.g. Program Chair/Director

Responsibility for approving recommendation, providing any resources made necessary by the recommendation, and overall monitoring of the implementation of the recommendation:

Internship Co-ordinator, Program Director, Internship Admin, Department Chair

Status for 1-year Follow-Up Report:

- the FEAS Co-Op office has been created since the PPR was submitted
- ~74% of ELE students apply and are qualified to take part in co-op
- In 2017/18 we had 40 ELE students on paid co-op. In 2022/23 we currently have 67. That is a >160% increase.
- this continues to be a priority of the co-op office and the DEPT of ECBE